

# Air Quality and Health Impacts Associated with Fireworks in Hawaii on New Year's, 2000

Fireworks use is especially heavy around New Year's.

Fine particles in fireworks smoke penetrate deeply into the lungs.

Hospitals and ambulances handled a significant number of fireworks-related injuries and illnesses on New Year's.

The use of fireworks on certain holidays has dramatically increased in recent years. Air quality impacts that accompany the heavy use of fireworks have also increased. Moreover, such fireworks use can lead to unnecessary injuries, aggravation of existing lung and heart diseases, and even death.



Honolulu Star-Bulletin photo by George F. Lee

*Fireworks were heavily used in Honolulu on New Year's Eve this year.*

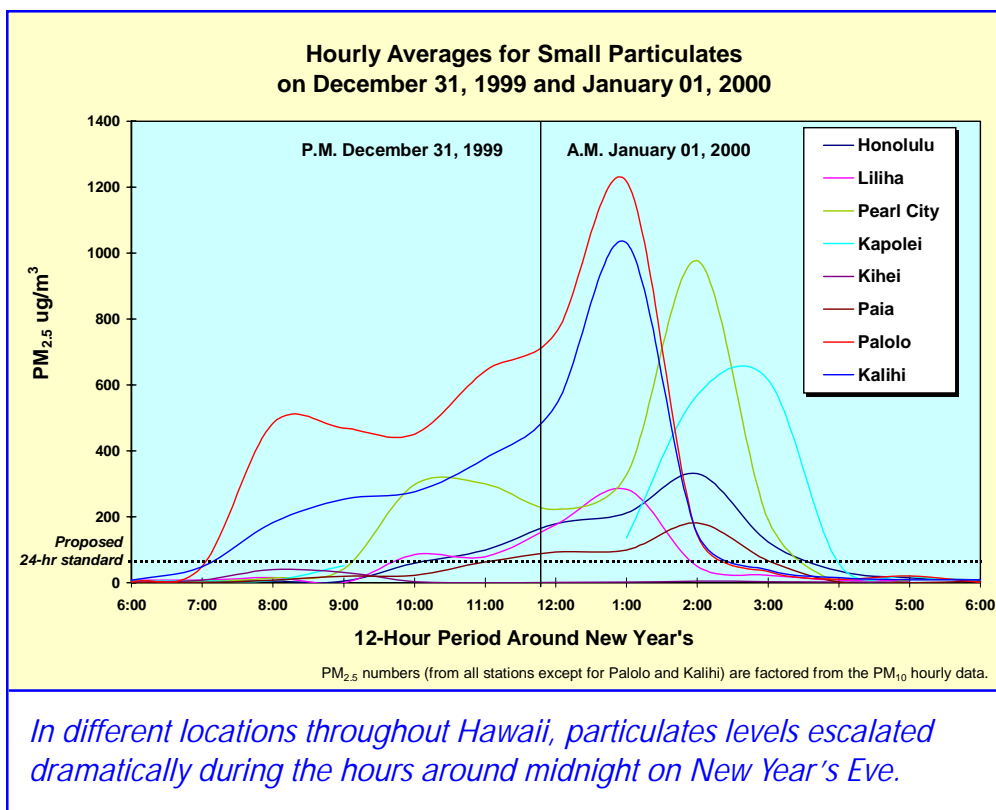
Firework smoke consists primarily of fine particles. These fine particles can penetrate deeply into the lungs and aggravate conditions such as asthma, emphysema and chronic bronchitis. Lung impairment can persist for 2-3 weeks after exposure to high levels of particulate matter. Studies have shown that even short-term exposure to elevated levels of fine particles can result in serious adverse health effects including:

- Increased hospital admissions and emergency room visits;
- Aggravation of existing heart and lung diseases; and
- Lung tissue damage.

## FAST FACTS REGARDING FIREWORKS ON NEW YEARS, 2000

- Reports from 26 hospitals statewide indicate at least 137 injuries and illnesses related to fireworks (Source: Health Care Association of Hawaii survey, preliminary results)
- \$74,000 in medical supplies alone were used to treat victims of fireworks-related injuries/illnesses. Costs for medical practitioners' fees have not been calculated. (Source: HCAH)
- The average number of respiratory patients at Queen's Hospital Emergency Room from 12/31/99 to 1/1/00 was 18, compared with the average of 6 per day for the preceding months. It is not known how many of those cases were attributable to fireworks. (Source: Queen's Hospital)
- Ambulances in Honolulu responded to 370 calls on New Year's Eve and New Year's Day. This figure, which includes all ambulance calls, is 50% higher than the typical 2-day period. Eighteen of the requests were for respiratory distress and 27 were for fireworks injuries (mostly burns). (Source: DOH/EMS)
- The 24-hour average for particulate air pollution in Pearl City, Oahu on January 1, 2000 was higher than the worst 24-hour averages for Los Angeles, Denver, Chicago, Boston and New York City in 1999.

*(Continued on reverse)*

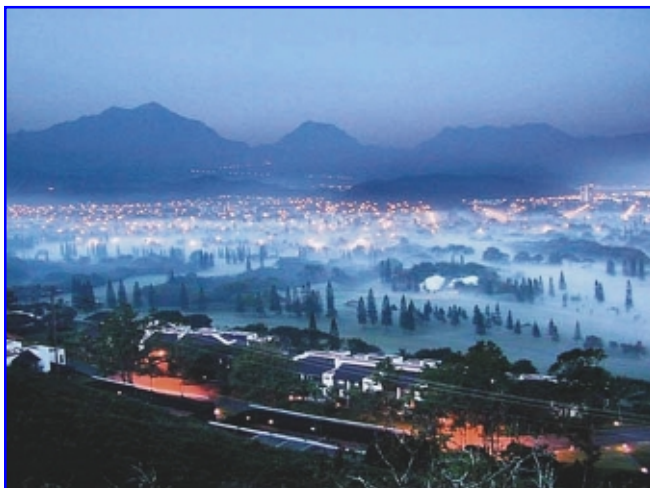


When fine particles are inhaled, children, the elderly and those with chronic lung or heart disease are most at risk. Those without a sensitivity to such air pollution may also feel irritation in the lungs.

## CONCLUSION

Air pollution due to fireworks use caused significant adverse health affects in Hawaii last New Year's Eve. Air quality data and information from local hospitals indicate that, if heavy fireworks use occurs every year, then Hawaii residents and visitors will continue to suffer from that air pollution.

Honolulu Star-Bulletin photo by Ken Ige



*Kailua is enshrouded with the smoke created by the use of fireworks for New Year's, 2000.*

Excessive and uncontrolled use of fireworks can lead to unnecessary injuries, aggravate existing diseases, and cause discomfort even in healthy individuals.

The State Department of Health recommends restricting fireworks use and sales to those receiving permits from the respective counties for cultural and religious events.

On New Year's Eve, air pollution increased greatly during the hours around midnight.

Children, the elderly and those with existing lung or heart disease are especially susceptible to heavy smoke pollution.

Recommendation:  
Ban fireworks except for cultural and religious purposes as permitted by the counties.

Prepared by:  
Department of Health  
Environmental Planning  
P.O. Box 3378  
Honolulu, HI 96801  
(808) 586-4337